CHAPTER III
RESEARCH METHODOLOGY

This chapter explains the methodology applied by the researcher in order to find out the research question which is stated in the previous chapter. This section covers research site and participants, research design, variables, research hypothesis, data collection technique and data analysis.

3.1 Research Site and Participants

This research was implemented in one Senior High School in Garut. There are three reasons why the researcher chose this school. Firstly, almost all of the students in the tenth grade have a problem in writing; they said writing a text is difficult to do. Secondly, the students of tenth grade in this school told that they were easily getting bored in the class because of the media used by the teacher. The last, this school was chosen due to the researchers' accessibility to the place.

In addition, this research was given to two classes of tenth grade; X MIA 1 and X MIA 2. The experimental group was X MIA 1 and the control group was X MIA 2. The participant of experimental group consisted of 36 students, in which 11 students of them were male and 25 students were female, and the participant of control group consisted of 35 students, in which 12 students of them were male and 23 students were female.

3.2 Research Design

This research employed a quantitative research by using a true experimental design. There are some reasons why the design was selected by the researcher. First, a true experimental design is commonly used in educational research in order to establish cause and effect relationship among the groups of variable. Second, a true experimental design was chosen by the researcher to find out the effectiveness of using digital comics in teaching writing of narrative text. The last, the researcher randomly assigned the participants to this research.

This design took two groups as investigated group, namely experimental group, and control or comparison group. Both of them got different treatment. The

experimental group received digital comics used in teaching learning English as a treatment. On the other hand, the control group received conventional treatment (without using digital comics) in teaching learning process. Both groups received pretest and posttest to measure their writing scores. Semantically, the design is as follows:

Table 3.1

True-experimental Design

Experimental	RO_1	X	O_2
Control	RO_3		O_4

The observation or measurement process of students' writing scores is represented by "*RO"*. The *"*RO_1" and the *"*RO_3*"* are students' writing scores in the pretest, while the "O_2" and the "O_4" are the students' writing scores on the posttest. The last, "*X"* refers to the exposure to an experiment or treatment.

3.3 Variables

This research investigated two variables, which are independent variable and dependent variable.

1. Independent Variable.

   Independent variable is the variable that the experimenter manipulates (Coolidge, 2000, p.15). In this research, digital comic media was chosen as the independent variable because this instructional media is the major variable to be investigated. It was selected and manipulated. In addition, its impact was measured by the researcher.

2. Dependent Variable.

   Dependent variable is the variable that will be affected by independent variable (Coolidge, 2000, p.15). The dependent variable of this research was student's narrative text writing ability. This variable was observed and measured to determine the effect of the independent variable.

3.4 Research Hypothesis

Hypothesis is an important aspect in order to predict or temporally to answer the research problems. The research hypothesis is also called research idea

(Coolidge, 2000, p.95). There were two hypotheses taken in this research; null hypothesis and alternative hypothesis.

Null hypothesis occurred when there is no significant difference between the posttest means of control and experimental group after applying the treatments (Coolidge, 2000, p.96). Whereas, alternative hypothesis occurred when there is a significant difference between the posttest means of control and experimental group after applying the treatments (Coolidge, 2000, p.96). The formula is stated below:

$$H_0 : \mu \text{ control} = \text{experimental design}$$
$$H_a : \mu \text{ control} \neq \text{experimental design}$$

3.5 Data Collection Technique

The data collection technique of this research consisted of two parts. The first is research instrument, and the second is research procedure.

3.5.1 Research Instrument

Instrumentation is the whole process of collecting data for a research (Frankel & Wallen, 2000). In order to collect the data for this research, the data collection techniques used to gather the information were tests (pretest and posttest) and questionnaire.

a. Test

The test which was used to collect students' score in this research was writing test. The writing test was chosen by the researcher because it was assumed to be the best way to test writing ability (Huges, as cited in Karunia, 2009, p.28). In the tests, the students were required to write a narrative text based on a presented topic. To acquire students' writing score, a scoring rubric formulated by Jacob, et al (1981) was used in this research.

The adapted scoring rubric consists of five aspects, which are content, organization, vocabulary, language use, and mechanics. The scoring rubric is presented below:

Table 3.2

ESL Composition Profile

No.	Writing Aspect	Score	Level	Criteria
1	Content	30-27	Excellent to Very good	Knowledgeable, substantive, though development of thesis, relevant to assigned topic.
		26-22	Good to Average	Some knowledge of subject, adequate range, limited development of thesis, mostly relevant to topic but lacks details.
		21-17	Fair to Poor	Limited knowledge of subject, little substance, inadequate development of thesis.
		16-13	Very Poor	Does not show knowledge of subject, non-substantive, not pertinent or not enough to evaluate.
2	Organization	20-18	Excellent to Very good	Fluent expression, ideas clearly stated/supported, succinct, well-organized, logical sequencing, cohesive.
		17-14	Good to Average	Somewhat choppy, loosely organized but main ideas stand out, limited support, logical but incomplete sequencing.
		13-10	Fair to Poor	Non-fluent, ideas confused or disconnected, lacks logical sequencing and developments.
		9-7	Very Poor	Does not communicate, no organization or not enough to evaluate.
3	Vocabulary	20-18	Excellent to Very good	Sophisticated range, effective word/idiom choice, and usage, words form mastery, appropriate register
		17-14	Good to Average	Adequate range, occasional errors of word/idiom form, choice, usage but meaning not obscured
		13-10	Fair to Poor	Limited range, frequent errors of word/idiom form, choice, usage, meaning confused or obscured
		9-7	Very Poor	Essentially translation, little knowledge of English vocabulary, idioms, word forms, or not enough to evaluate.
4	Language Use	25-22	Excellent to Very	Effective complex construction, errors of agreement, tense, number, word order/function,

			good	articles, nouns, prepositions.
		21-18	Good to Average	Effective but simple construction, minor problems in complex construction, several errors of agreement, tense, number, word order/function, articles, pronouns, prepositions but meaning seldom obscured
		17-11	Fair to Poor	Major problems in simple/complex constructions, frequent errors of negation, agreement, tense, number, word order/function, articles, pronouns, prepositions and/or fragments, run-ons, deletions, meaning confused or obscured.
		10-5	Very Poor	Virtually no mastery of sentence construction rules, dominated by errors, does not communicate or not enough to evaluate.
5	Mechanics	5	Excellent to Very good	Demonstrates mastery of conventions, few errors of spelling, punctuation, capitalization, paragraphing.
		4	Good to Average	Occasional errors of spelling, punctuation, capitalization, paragraphing but meaning not obscured.
		3	Fair to Poor	Frequent errors of spelling, punctuation, capitalization, paragraphing, poor handwriting, meaning confused or obscured.
		2	Very Poor	No mastery of conventions, dominated by errors of spelling, punctuation, capitalization, paragraphing, handwriting illegible or not enough to evaluate.

The tests of this research consisted of pretest and posttest. The researcher used a pretest to find the initial scores of the experimental group and the control group. A posttest conducted to find out the students' writing score after they were given a treatment. The implementation of a posttest was intended to find out the students' improvement after given a treatment.

b. Questionnaire

A questionnaire was the second instrument which consisted of 10 questions. A close-ended question is a question that contains a set of answer that a respondent chooses (Beins, as cited in Darmawan, 2013, p.25). The questionnaire

was given to the group who got the treatment. This instrument was used to analyze the advantages and the disadvantages of using digital comics in teaching writing of narrative text from the students' perception.

The questionnaire administrated in the experimental group after the posttest. The questions were about the students' response to the use of digital comics as media in teaching writing of narrative text. The questions of the questionnaire are as follow:

Table 3.3

Questionnaire

No.	Pernyataan	Setuju	Tidak Setuju
1.	Penggunaan media komik digital dapat meningkatkan ketertarikan peserta didik dalam pembelajaran menulis teks naratif Bahasa Inggris.		
2.	Penggunaan media komik digital mampu membuat peserta didik lebih antusias dalam pembelajaran menulis teks naratif Bahasa Inggris.		
3.	Penggunaan media komik digital mempermudah peserta didik dalam mempelajari materi menulis teks naratif Bahasa Inggris.		
4.	Penggunaan media komik digital mampu memotivasi peserta didik dalam mempelajari meteri menulis teks naratif Bahasa Inggris.		
5.	Penggunaan media komik digital mampu meningkatkan kemampuan berpikir kreatif peserta didik dalam mempelajari teks naratif Bahasa Inggris.		
6.	Penggunaan media komik digital dalam pembelajaran menulis teks naratif Bahasa Inggris mampu membuat peserta didik lebih memperhatikan materi yang disampaikan ketika kegiatan pembelajaran berlangsung.		
7.	Penggunaan media komik digital dalam pembelajaran menulis teks naratif Bahasa Inggris membuat peserta didik malas dalam membaca teks yang tidak bergambar.		
8.	Penggunaan media komik digital dalam pembelajaran menulis teks naratif Bahasa Inggris lebih baik dari media pembelajaran yang lainnya (misalnya video, audio, dsb.).		
9.	Penggunaan media komik digital dalam pembelajaran menulis teks naratif Bahasa Inggris membuat peserta didik berbicara kotor.		
10.	Penggunaan media komik digital dalam pembelajaran menulis teks		

	naratif Bahasa Inggris sesuai jika digunakan untuk usia 15-17 tahun.		

3.5.2 Research Procedure

This research conducted in four meetings. In the first meeting, the researcher conducted a pretest. In the second and in the third meeting, the researcher gave the treatment to the participant. In the last meeting, the researcher conducted a posttest, but before the researcher did the research, she administrated the pilot-test first. The procedure of this research involved the following steps:

3.5.2.1 Administering Pilot-test

A pilot test was implemented by the researcher in order to know the validity and the reliability of the test and the media used in teaching learning process. The test was used to know the quality of the test and the media, whether it is appropriate or not to be used. In addition, the test was also used as a reflection in making some revisions of the test items.

This pilot test was implemented to a different class of the sample in the same grade. In administering the pilot-test, the digital comic was used by the researcher as a media in teaching writing of narrative text. The researcher tried to check whether the media is appropriate to use or not, and the media is understandable or not.

In addition, the instruction contained in the test was read by the students in order to find out whether or not the instruction understandable and clear enough, afterward the students were asked to do the test. After the test was given, the researcher asked the students about the writing test and also the digital comics that they received.

3.5.2.2 Administering Pretest

A pretest was given at the first meeting. The researcher instructed the students to make a writing composition as the pretest. After that, the researcher explained what the students are going to do and distributed the writing test to know the students' ability in writing narrative text. In the last, the researcher gave scores to the students' result test.

3.5.2.3 Conducting Treatment

After giving a pretest, the researcher gave the treatment for two times, the meeting ran for 90 minutes in each meeting.

a. Experimental Group

In the second meeting, the researcher invited a digital comic and gave the materials of narrative text (purpose, types, adverbs of time, and character of the story) by using a digital comic.

In the third meeting, the researcher still used a digital comic but with a different topic. The teacher also gave the materials of narrative text (plot, setting, and sequence of the story) and asked the students to compose the pictures of narrative text based on the instruction given.

b. Control Group

In the second meeting, the researcher gave the materials of narrative text without digital comics; it covered purpose, types, adverbs of time, and character of the story. Moreover, in the third meeting, the researcher continued the materials of narrative text (plot, setting, and sequence of the story).

3.5.2.4 Administering Posttest

After the treatment was given to the experimental group and the control group, a set of writing test as the posttest was conducted in the experimental group and also in the control group. The researcher gave scores to the result of the students' test.

In the last meeting, teacher reviewed and concluded the whole materials of narrative text. After that, the researcher instructed the students to make a writing composition as the posttest. The researcher explained what the students were going to do with the posttest. In the last, the researcher gave scores to the students' test result.

3.5.2.5 Distributing Questionnaire

The questionnaire was used in this research in order to find out the advantages and the disadvantages of using digital comics in teaching writing of narrative text from the students' perception. This instrument consisted of several questions related to the students' perception about learning writing of narrative text.

The instrument administrated in the experimental group after the posttest. The questions were about the students' response to the use of digital comics as media in teaching writing of narrative text.

Table 3.4

Time Schedule of the Research

No	Experimental Group		Control Group	
	Day / Date	**Material**	**Day / Date**	**Material**
1	Monday / Jan 16th, 2016	Conducting instrument test to the students (Pilot-test)	Monday / Jan 16th, 2016	Conducting instrument test to the students (Pilot-test)
2	Tuesday / Jan 17th, 2016	Conducting a pretest	Tuesday / Jan 17th, 2016	Conducting a pretest
3	Tuesday / Jan 24th, 2016	First Treatment by using digital comic. Introducing general information of Narrative text (type, purpose, character, and adverbs of time) The Story: "*Sangkuriang"*	Tuesday / Jan 24th, 2016	First Treatment without digital comic. Introducing general information of Narrative text (type, purpose, character, and adverbs of time) The Story: "*Sangkuriang"*
4	Tuesday / Jan 31st, 2016	Second Treatment by using digital comics. Introducing plot and setting of a story and identifying the sequence of a story. The Story: *"Timun Mas"*	Tuesday / Jan 31st, 2016	Second Treatment without digital comics. Introducing plot and setting of a story and identifying the sequence of a story. The Story: *"Timun Mas"*
5	Tuesday / Feb 7th, 2016	Reviewing the materials, conducting a posttest and giving the questionnaires.	Tuesday / Feb 7th, 2016	Reviewing the materials and conducting a posttest.

3.6 Data Analysis

The researcher collected the data from pretest, posttest, and questionnaire by writing the result in a document. The result of this research was used to find out that using digital comics in teaching writing of narrative text is effective or not, and it was also used to know the advantages and the disadvantages of using digital comics in teaching writing of narrative text.

3.6.1 Pilot-test Data Analysis

This data analysis was used to analyze whether or not the students could understand the instruction of the writing test and the media used in teaching learning process. After the pilot test data were collected, it was proceeded to measure its validity, reliability and difficulty level. Therefore, only the reliable and valid items were used as the instrument of this research.

3.6.2 Pretest and Posttest Data Analysis

The pretest and posttest served as the research instrument was employed to investigate the initial differences between experimental group and control group before they received the treatment. On the other hand, a posttest was also served as an instrument in order to find out the improvement of student' writing ability and it was given at the beginning of the research. A hypothesis was started with alpha level 0.05. The data collected from the pretest and posttest was computed using IBM SPSS (Statistical Product and Service Solution) version 24 for Windows.

There were several conditions that need to be fulfilled in analyzing the result of the research. Those are the normality of the data distribution, the homogeneity of the data variance, the calculation of t-test and effect size.

3.6.2.1 Normality Distribution Test

Normal distribution test was calculated to investigate whether or not the distribution of pretest and posttest scores in groups were normally distributed. Shapiro-Wilk test formula in IBM SPSS Statistics v.24 was used to analyze the normality of distributions. For the first step, the researcher stated the hypothesis and setting the alpha level at 0.05, where:

H_0 = the scores of experimental group and control group are normally distributed

H_1 = the scores of experimental group and control group are not normally distributed

Second, the researcher analyzed the normality distribution by using Shapiro-Wilk test formula in IBM SPSS Statistics v.24. Third, the researcher compared the Sig. (probability) with the level of significance ($\alpha = 0.05$) to test the hypothesis. If the probability is more than 0.05, H_0 is accepted. In contrast, if the

probability < 0.05, H_0 is rejected. In conclusion, if the Sig. (probability) is more than the level of significance (0.05), the null hypothesis is accepted; the scores are normally distributed.

3.6.2.2 Variance Homogeneity Test

After getting the result of normal distribution test, the homogeneity of variance test was conducted in order to examine whether or not the score of the research was homogenous variance. The statistical calculation of variance homogeneity test used Levene Statistic Test formula in IBM SPSS Statistics v.24 by following these steps:

First, the researcher stated the hypothesis and setting the alpha level at 0.05, where:

H_0 = the variance of the experimental group and the control group are homogenous.

H_1 = the variance of the experimental group and the control group are not homogenous.

Second, the researcher analyzed the homogeneity of variance by using Levene formula in IBM SPSS Statistics v.24. The last, the researcher compared the Sig. (probability) with the level of significance to test the hypothesis. If the probability is more than 0.05, then H_0 is accepted. In contrast, if the probability < 0.05, then H_0 is rejected. On the other words, if the Sig. (probability) is more than the level significance (0.05), the null hypothesis is accepted; the variance of the experimental group and the control group are homogenous.

3.6.2.3 T-Test Calculation

In this research, the independent t-test in IBM SPSS Statistics v.24 was used to investigate the difference between the means of experimental and control group. The procedures of the test are below:

First, the researcher stated the hypothesis and setting the alpha level at 0.05, where:

H_0 = there is no significant difference between mean for experimental group and control group.

H_1 = there is a significant difference between mean for experimental group and control group.

Second, the researcher calculated t-test score using IBM SPSS Statistics v.24, and in the last step, the researcher compared t-obtained and t-critical. If t-obtained > t-critical, it means that the H_0 is rejected, there is a significant difference between two groups. If t-obtained < t-critical, the H_0 is not rejected; there is no significant difference between two groups.

3.6.2.4 The Calculation of Effect Size

The effect size computation was used to check the effect level of the treatments that are given to the experimental group. The effect size refers to the effect of the influence of independent variable upon the dependent variable; it is the way to consider how well the treatment worked (Coolidge, 2000, p.151). The correlation coefficient of effect size will always be positive and range from 0 to 1.00. The larger effect size value is the larger impact of treatment will be (Coolidge, 2000, p.150). Effect Size' Formula is:

$$r = \sqrt{\frac{t^2}{t^2 + df}}$$

r = effect size

t = $t_{.obt}$ or t.value from the calculation of independent t-test

df = N_1+N_2-2

Moreover, the researcher used the following scale to interpret the magnitude of the effect size:

Table 3.5

Effect Size Scale

Effect Size	*r* value
Small	0.100
Medium	0.243
Large	0.371

3.6.3 Questionnaire Data Analysis

The formula of percentage was used to analyze the questionnaires by the researcher. The data were interpreted based on the frequency of the students' answer. The numbers of respondents choosing "agree" and "disagree" were counted and changed into a percentage form. The option "agree" was counted 1

and the option “disagree” was counted 0. The result was analyzed by using this following formula:

$$P = \frac{f}{n} x\, 100$$

The percentage of the response is represented by “P”, whereas “f” represents the frequency of answer, “n” is the number of students, and 100 is constant.

This section has explained research methodology of the research which involves research site and participants, research design, variables, research hypothesis, data collection technique, and data analysis.